Montana Department of
ENVIRONMENTAL QUALITY

October 24, 2006

Dear Reader:

Enclosed for your review and comment is the Draft Checklist Environmental Assessment (CEA) for an amendment to Operating Permit 00157 requested by Ruby Valley Garnet (RVG) of Alder, MT on December 5, 2005. RVG has operated the Red Wash site under a Small Miner's Exclusion Statement (SMES) since 2004 and has disturbed six acres to date. RVG can no longer keep the area disturbed at any one time to less than five acres and must apply for an amendment to their permit. The Red Wash site is located in portions of Sections 22, 23, 24 and 25, Township 6 South, Range 3 West, about three miles southeast of Alder, MT. This Draft CEA evaluates the potential impacts from this operation. The Montana Department of Environmental Quality (DEQ) must decide whether to approve the permit as proposed, deny the request for an operating permit, or approve the operating permit with modifications.

The Draft CEA addresses issues and concerns raised during public involvement and from agency scoping. The agencies have decided to approve the permit as proposed as the preliminary preferred alternative. This is not a final decision. This conclusion may change based on comments received from the public on this Draft CEA, new information, or new analysis that may be needed in preparing the Final CEA.

Copies of the Draft CEA can be obtained by writing DEQ, Environmental Management Bureau, P.O. Box 200901, Helena, MT 59620, c/o Herb Rolfes, or calling (406)444-3841; or sending email addressed to hrolfes@mt.gov. The Draft CEA will also be posted on the DEQ web page: www.deq.mt.gov. Public comments concerning the adequacy and accuracy of the Draft CEA will be accepted for 30 days, until November 24, 2006.

Since the Final EA may only contain public comments and responses, and a list of changes to the Draft CEA, please keep this Draft CEA for future reference.

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Warren D. McCullough, Chief
Environmental Management Bureau

Date

File: 00157.353

RUBY VALLET GARNET RED WASH AMENDMENT
DRAFT CHECKLIST ENVIRONMENTAL ASSESSMENT

COMPANY NAME: Ruby Valley Garnet, LLC, 2200 Highway 287, P.O. Box 161, Alder, MT 59710
PROJECT: Excavating overburden to a depth of about 15 feet for the purpose of recovering garnet at the Red Wash site.
PERMIT OR LICENSE: Amendment to Operating Permit 00157.
LOCATION: The proposed Red Wash amendment would be located about three miles southeast of Alder, MT. in Sections 22, 23, 24 and 25, Township 6 South, Range 3 West (See Figure 1, Existing and Proposed Permit Boundaries)
County: Madison
PROPERTY OWNERSHIP: [ ] Federal [ ] State [X] Private

TYPE AND PURPOSE OF ACTION:
Current permitted conditions at Alder.

Permit Area:	505.6 acres
Permitted Disturbance	362 acres
Current Disturbance	36.3 acres
Bonded Disturbance	36.3 acres
Total Reclamation Bond	$132,185
Obligated Bond	$132,185
Unobligated Bond	$0

Red Wash Amendment:

Proposed Area	158 acres
Proposed Disturbance	45 acres

Ruby Valley Garnet (RVG) has been mining garnets at the Red Wash site under a Small Miner's Exclusion Statement (SMES) since 2004 and has disturbed six acres to date. RVG can no longer keep the area disturbed at any one time to less than five acres and must apply for an operating permit amendment. RVG applied for an amendment to Operating Permit 00157 on December 5, 2005. Responses to deficiencies were received on May 17, 2006 and June 22, 2006. The application is now complete. RVG would placer mine from a dry gulch, removing approximately 200 thousand tons of ore annually using an excavator, front end loaders, and crawler tractors. A concentrate of garnet sand would be produced. A mobile dry process utilizing dry screening and magnetically concentrating the garnet bearing ore at the Red Wash site would be combined with a wet process using jig and spiral concentrators at the Alder processing site to recover the garnet sand. Ground disturbance at the Red Wash site would normally be 12 to 15 feet in depth and 100 hundred feet in width with disturbance at any one time limited to approximately 7 to 12 acres. The total Red Wash amendment area would be 158 acres, of which about 45 acres would eventually be disturbed. Final concentration, bagging, and loading of garnet sand would occur at the processing facility at Alder.

Salvageable topsoil at the Red Wash site is limited, with an average depth of less than six inches. RVG does not propose to salvage subsoils. The topsoil will be augmented with fines acquired as a result of mining and processing. Silt and clay fines comprise ten to thirty percent of the deposit. Separation of the fines during processing would enhance the area disturbed by placing these fines on top of coarser materials during reclamation. A combination of salvaged soil and fines recovered from processing would be used to form a growth medium with a minimum thickness of six inches during reclamation.

The initial overburden from the pit would be stored in a temporary holding area until the mine has reached its target depth at the west end. As mining continues to the east, the overburden would be backfilled into the pit. The overburden storage area would not exceed 5,000 tons at any one time.

Access to the Red Wash site would be by a County road west of the mine site. Going east from the County road, final access is by a ranch road which has been widened to accommodate haulage of garnet ore from the Red Wash mine site to the processing facility.

Water would not be used at the Red Wash site. A dry garnet recovery process would be used.

There would be no fuel storage at the Red Wash site. All fuel for equipment would be brought in by a fuel service truck as needed.

Power would be supplied by a diesel powered generator.

Solid waste would be disposed of at the existing Madison County facility located immediately adjacent to the western edge of the proposed permit boundary, or hauled by truck to the Madison County landfill sites located in Twin Bridges or Ennis.

The proposed Red Wash site is located in: Sections 22, 23, 24, and 25, Township 6 South, Range 4 West and Section 30, Township 6 South, Range 3 West

N = Not present or No Impact would occur.
Y = Impacts may occur (explain under Potential Impacts).
N/A = Not Applicable

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACT AND MITIGATION MEASURES
1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE: Are soils present which are fragile, erosive, susceptible to compaction, or unstable? Are there unusual or unstable geologic features? Are there special reclamation considerations?	[Y] Outcrops of garnet-bearing schists, quartzite and gneiss, several hundred feet wide and several miles long, are present north, east, and south of the proposed permit area and are the source of garnet concentrations in area alluvial deposits. The Red Wash site contains alluvial deposits of almandine garnets that were eroded from garnet-bearing amphibolites and garnet-quartz-feldspar gneisses exposed in the upper reaches of the drainage. The deposit averages approximately 10 feet in depth and 100 feet in width and has a length of over three miles. The garnet sand deposit is contained within an alluvial channel. There are no unique geological features in the proposed permit area other than the deposit of garnet sands. Removal of the garnet sands would be an irreversible and irretrievable impact of allowing garnet mining. Soils at the Red Wash site are composed of Kalsted Sandy Loam, on two to eight percent slopes. This is a well drained soil found on terraces and hills, mainly in intermontane valleys, which is formed in calcareous alluvium. Typically, the upper layer of soil is a sandy loam

IMPACTS ON THE PHYSICAL ENVIRONMENT	
	about 7 inches thick with the next 19 inches of subsoil being a white sandy loam and the lower part, down to a depth of 60 inches being a gravely sandy loam. Permeability is moderately rapid. The potential for runoff is medium with a moderate water erosion hazard. As a stipulation RVG would commit to construction of an impoundment downstream of the Red Wash site capable of holding the 10-yr, 24-hr precipitation event. A storm water permit may also need to be obtained. The soil has a high potential for wind erosion if the site is disturbed. RVG has committed to limit total soil disturbance in the proposed 158 acre amendment to 7-12 acres disturbed and unreclaimed at any one time. This would limit the potential for wind erosion. RVG proposes to salvage only the upper layer of soil (about 6 inches) and not salvage the subsoil. The subsoil would be removed and mixed with overburden. RVG plans to recover fines produced during the garnet recovery process and use the fines as supplemental growth medium. Salvaging soils for later replacement would accelerate new soil development on reclaimed areas. Soil disturbance would be an unavoidable impact. During periods of extreme drought, reclamation seedings may fail with some resulting loss of soil. Failed seedings would be reseeded until vegetation is successfully established and the reclamation bond is released.
2. WATER QUALITY, QUANTITY AND DISTRIBUTION: Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality?	[N] The Red Wash site is dry with no flowing water. There are no wetlands at the proposed site. There are no monitoring wells proposed by RVG. Mining to date under the SMES at the Red Wash site has not encountered any water. No settling ponds or reservoirs are proposed. Drinking water is hauled to the site. There are no plans for a septic tank drainfield as all toilets would be portable. There is no potential for violation of ambient drinking water standards as no chemicals would be used in the dry separation process.
3. AIR QUALITY: Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?	[Y] Dust would be produced by hauling ore three miles from the Red Wash site to the existing processing facility at Alder Gulch. Road surfacing with washed gravels and watering the road by a water truck could also take place. Vehicle speed would be restricted on the main access road and other interior roads to reduce the potential for dust

IMPACTS ON THE PHYSICAL ENVIRONMENT	
	emissions. The operator currently holds an air quality permit (#2888-02) for the dry process plant. They are currently in compliance with the air quality permit and have had no exceedances or violations under the SMES.
4. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be significantly impacted? Are any rare plants or cover types present?	[Y] The native plant communities to be disturbed are dominated by sagebrush, grasses and sparsely located Rocky Mountain junipers. These plant communities are common in this region. Disturbance of these native plant communities is an unavoidable impact of mining. Reclamation of the sites and seeding of native plant species would limit impacts but the native plant communities cannot be restored. A search of the Natural Resource Information System (NRIS) database found that there are no known threatened and endangered or sensitive plant species growing in the proposed permit area. Noxious weeds on the site include spotted knapweed, Canada thistle, and henbane. The disturbance on the site would lead to more noxious weed invasion. This is an unavoidable impact of disturbance. Weed control efforts would limit these impacts. Both the Alder Gulch and Red Wash sites will be included in the ongoing comprehensive weed control program. A weed control plan has been submitted to the Madison County Weed Board.
5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish?	[N] Most wildlife species within the permit area have been found to be transients or occupy portions of the area as their home range. Mule deer are the most common big game species in the area. Only an occasional elk and pronghorn antelope has been observed in the proposed Red Wash site.
6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES: Are any federally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?	[N] A search of the NRIS database found that there are no known threatened and endangered animal species in the area. Bald eagles are seasonal migrants through the area. NRIS indicated that a number of animal species of concern could be expected or inferred by habitat to be found in the proposed permit boundary. These species include: spotted skunk, bobolink, Canada lynx and greater sage grouse. None of these species have been sighted in the proposed permit boundary.
7. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?	[N] A records search by the State Historic Preservation Office indicated that a number of cultural areas of concern exist in the general area, but not in the area proposed to be disturbed. If mining related disturbance were to occur beyond what is being proposed a cultural resource inventory may need to be conducted.

IMPACTS ON THE PHYSICAL ENVIRONMENT	
	As noted in the application, the operator would provide protection for archaeological and historical sites if they are found in the permit area.
8. AESTHETICS: Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?	[N] The Red Wash site is not visible to the general public, is located in a remote rural area, and is at least one to two miles from paved Highway 287. After mining and reclamation are complete the visual appearance would be changed from a sagebrush dominated plant community to one dominated by seeded native grasses. The lack of sagebrush would offer greater usability to the landowner for cattle grazing which is the current and proposed post-mine land use. The Red Wash site is in an isolated location, about one mile from the nearest residence. Noise should not be an issue. No noise complaints have occurred since the Red Wash site was activated under the SMES in 2004. The proposed site is not visible from any residence, and therefore lights should not be a concern. Of the 20 or so employees only six to eight would be seasonal. The wet processing operations would likely involve one shift per day, five days per week with the screening and bagging operations operating up to 24 hours per day, six days per week. The mine operating hours at the Red Wash site could reach 24 hours per day, 7 days per week depending on market conditions. Mining activities typically will not occur during winter months.
9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY: Will the project use resources that are limited in the area?	[N] The Alder Gulch site obtains its power supply from an existing power line located along Ruby Road. The Red Wash site is isolated from conventional power and gas and would derive its energy from a diesel powered generator located on site.
10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES: Are there other activities nearby that will affect the project?	[N] Following the end of major mining activity in the Alder area farming and ranching became the primary and basic industries. Cattle and alfalfa hay are the principal agricultural products. More recently, tourism and recreational opportunities have become a major factor in the socioeconomic structure of the Alder and the Ruby Valley area. No nearby activities would affect the project.

IMPACTS ON THE HUMAN POPULATION	
11. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?	[N]
12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL	[N] The proposed project would not affect other industrial, commercial

IMPACTS ON THE HUMAN POPULATION	
ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?	or agricultural activities or production.
13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.	[Y] The mine currently employs approximately 15 to 20 people, with most coming from the local area. No additional work force is expected since the site is currently being worked under an SMES. This and other natural resource activities (mining) are the major employers in Madison County.
14. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue?	[Y] This project would create tax revenue.
15. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc.) be needed?	[N] There is no anticipated need for increased government services that would result from this project.
16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	[Y] Plans are in effect in the area but none affect private lands.
17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES: Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?	[N] There are no wilderness or major recreational areas surrounding the Red Wash site. Public recreational opportunities within the proposed permit area and immediately adjacent area are limited, as these lands are privately owned. Landowners and some locals occasionally fish in several ponds within the Alder Gulch permit area that contain planted sport fish populations. Hunting mule deer is the major recreational use in the Red Wash area.
18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing?	[N] The project employment is relatively small and most employees will be recruited from the local area. It is anticipated that most employees will reside within a short commuting distance.
19. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?	[N] The work force would be local or drawn from neighboring counties. Royalty payments made to landowners would help offset some of the financial impacts resulting from regional drought.
20. CULTURAL UNIQUENESS	[N]

IMPACTS ON THE HUMAN POPULATION	
AND DIVERSITY: Will the action cause a shift in some unique quality of the area?	
21. PRIVATE PROPERTY IMPACTS: Are we regulating the use of private property under a regulatory statute adopted pursuant to the police power of the state? (Property management, grants of financial assistance, and the exercise of the power of eminent domain are not within this category.) If not, no further analysis is required.	[Y]
22. PRIVATE PROPERTY IMPACTS: Does the proposed regulatory action restrict the use of the regulated person's private property? If not, no further analysis is required.	[N]
23. PRIVATE PROPERTY IMPACTS: Does the agency have legal discretion to impose or not impose the proposed restriction or discretion as to how the restriction will be imposed? If not, no further analysis is required. If so, the agency must determine if there are alternatives that would reduce, minimize or eliminate the restriction on the use of private property, and analyze such alternatives.	[N/A]
24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:	[N]

25. Alternatives Considered:
No Action: Deny the request for an operating permit amendment. No issues were identified which would require denying the permit amendment.
Approval: Approve the permit as proposed.
Approval with Modification: Several unresolved issues were identified which would require modification of the proposal.

RVG must commit to construction of an impoundment(s) downstream of the Red Wash site that is

capable of holding the 10-yr, 24-hr precipitation event.

RVG may need to obtain a storm water permit for the Red Wash site.

26. Public Involvement: A legal notice and press release were published August 30, 2006 notifying the public of the proposed operation. No comments were received. Another legal notice and press release will be issued when this draft CEA is released.

27. Other Governmental Agencies with Jurisdiction: None

28. Magnitude and Significance of Potential Impacts: There would be no significant impacts associated with this proposal. As noted, there would be impacts to soils, geologic resources, native plant communities and from an increase in noxious weeds in the area,

29. Cumulative Impacts: RVG has seen limited operation at the Alder Gulch location since April 1995. The permit was transferred from Cominco American Inc. to Montana Oregon Investment Group LLC (MOIG) in October 2000. The permit was transferred from MOIG to RVG in September 2004. Operations commenced in September 2004 when mining at the Red Wash site began under their SMES. There are no other active mines in the surrounding area. DEQ has recently released an environmental assessment on a proposed garnet processing operation by Apex Abrasives near Glen, MT. If the proposed garnet operation near Glen is approved RVG could possibly be used to process the garnets for customers. DEQ would have to approve the use of the RVG processing facility at Alder for use as a custom mill.

30. Recommendation for Further Environmental Analysis:

[ ] EIS [ ] More Detailed EA [X] No Further Analysis

31. EA Checklist Prepared By: Herb Rolfes, Operating Permit Section Supervisor.

32. EA Reviewed By: Pete Strazdas, Exploration and Small Miner Section Supervisor, Patrick Plantenberg, Reclamation Specialist, and Warren McCullough, EMB Bureau Chief

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Signature Date

Herb Rolfes
Operating Permit Section Supervisor

File: pending Ruby Valley Garnet 0.70

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